Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Cancelled)

2. (Previously presented) A transmitter according to claim 10 wherein there are N antennas and a different set of sub-carriers separated by N sub-carriers is assigned to each of the plurality of antennas.

3. (Cancelled)

4. (Currently amended) A transmitter according to claim 10 wherein the header OFDM symbol further ~~contain~~ contains multiplexed broadcasting sub-carriers for each of the plurality of antennas.

5. (Previously presented) A transmitter according to claim 10, that transmits a preamble having a prefix, followed by two identical OFDM symbols having said header OFDM symbol format.

6. (Original) A transmitter according to claim 5 wherein the prefix is a cyclic extension of the two identical OFDM symbols.

7. (Previously presented) A transmitter according to claim 10 wherein the pilot channel sub-carriers have a BTS specific mapped complex sequence allowing efficient BTS identification.

8. (Previously presented) A transmitter according to claim 10 wherein the common synchronization channel is designed for fast and accurate initial acquisition.

9. (Previously presented) A transmitter according to claim 10 wherein the common synchronization channel is used for course synchronization and fine synchronization and the pilot channel is used for fine synchronization.

10. (Previously presented) A MIMO-OFDM transmitter configured to transmit a header symbol format in which sub-carriers of a header OFDM symbol are divided into a non-contiguous set of sub-carriers for each of a plurality of antennas, with each antenna transmitting the header OFDM symbol only on the respective set of sub-carriers;

wherein the header symbol contains a frequency multiplexed dedicated pilot channel on dedicated pilot channel sub-carriers and common synchronization channel on common synchronization channel sub-carriers for each of the plurality of antennas;

wherein the common synchronization channel is used to transmit a complex sequence which is different for each transmit antenna of one transmitter, but which is common for respective transmit antennas of each transmitter within a communications network.

11. (Previously presented) A transmitter according to claim 10 that transmits OFDM frames beginning with said header, and having scattered pilots throughout a remainder of OFDM symbols in each OFDM frame.

12. (Previously presented) A transmitter according to claim 10 wherein during the header, for each of N transmit antennas, dedicated pilot channel sub-carriers are transmitted and common synchronization channel sub-carriers are transmitted and broadcasting channel sub-carriers are transmitted.

13. (Previously presented) A transmitter according to claim 10 wherein the sub-carriers of the header OFDM symbol are organized as a repeating sequence of dedicated pilot channel sub-carriers for each of N transmit antennas and common synchronization channel sub-carriers for each of N transmit antennas, arranged in a predetermined order.

14. (Previously presented) A transmitter according to claim 4 wherein the sub-carriers of the header OFDM symbol are organized as a repeating sequence of at least one dedicated pilot channel sub-carrier for each of N transmit antennas, at least one common synchronization channel sub-carrier for each of N transmit antennas and at least one broadcast channel sub-carrier, arranged in a predetermined order.

15. (Cancelled)

16. (Previously presented) A receiver according to claim 17 that receives from N transmit antennas with a different set of sub-carriers separated by N sub-carriers assigned to each of the plurality of transmit antennas.

17. (Previously presented) A MIMO-OFDM receiver configured to receive a header symbol format in which sub-carriers of a header OFDM symbol are divided into a non-contiguous set of sub-carriers for each of a plurality of transmit antennas, with each antenna transmitting the header OFDM symbol only on the respective set of sub-carriers;

wherein the header symbol contains frequency multiplexed dedicated pilot channel sub-carriers and common synchronization channel sub-carriers for each of the plurality of transmit antennas;

wherein the common synchronization channel is used to transmit a complex sequence which is different for each transmit antenna of one transmitter, but which is common for respective transmit antennas of each transmitter within a communications network.

18. (Previously presented) A receiver according to claim 17 wherein the header OFDM symbol further contains multiplexed broadcasting carriers for each of the plurality of transmit antennas.

19. (Previously presented) A receiver according to claim 17 that receives a preamble having a prefix, followed by two identical OFDM symbols having said header OFDM symbol format.

20. (Previously presented) A receiver according to claim 17 wherein the dedicated pilot channel has a BTS specific mapped complex sequence, the receiver performing BTS identification on the basis of the dedicated pilot channel.

21. (Previously presented) A receiver according to claim 19 wherein the dedicated pilot channel has a BTS specific mapped complex sequence, the receiver performing BTS identification on the basis of the dedicated pilot channel.

22. (Currently amended) A receiver according to claim 21 wherein the header OFDM symbol ~~contain~~ contains multiplexed dedicated pilot channel sub-carriers and common synchronization

channel sub-carriers for each of the plurality of transmit antennas, the receiver performing course synchronization on the common synchronization channel by looking for a correlation peak between consecutive OFDM symbols which are identical.

23. (Previously presented) A receiver according to claim 22 that performs fine synchronization on the basis of the common synchronization channel sub-carriers and/or the dedicated pilot channel sub-carriers.

Claims 24 - 61 (Cancelled)